AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions:

Claims 1-6 (Canceled).

Claim 7 (Currently amended): A method for making a high fill factor image array comprising the steps:

providing a plurality of source-drain metal contacts on a substrate;

depositing a first passivation layer over the plurality of source-drain metal contacts and the substrate;

reducing the lateral leakage current between the plurality of source-drain metal contacts in the high fill factor image array by depositing a second passivation layer over the first passivation layer, the second passivation layer being thinner than the first passivation layer;

opening a plurality of via holes through the first and second passivation layers to the plurality of source-drain metal contacts;

depositing a layer of conductive material over the plurality of source-drain metal contacts and the second passivation layer;

depositing a first doped a-Si layer as an optically active layer over the layer of conductive material;

patterning the first doped a-Si layer and the layer of conductive material to form collection electrodes;

depositing a continuous layer of i a-Si disposed on the second passivation layer and the first doped a-Si layer;

depositing a continuous second layer of doped a-Si over the continuous layer of i a-Si;

depositing an upper conductive layer over the second layer of doped a-Si; and

patterning to form the image array;

Claim 8 (Original): The method for making a high fill factor image array according to claim 7, wherein the first passivation layer comprises silicon oxynitride, BCB, or a polyimide.

Claim 9 (Original): The method for making a high fill factor image array according to claim 7, wherein the second passivation layer is an oxide.

Claim 10 (Previously presented): The method for making a high fill factor image array according to claim 7, wherein the second passivation layer has a thickness of about 1000 Å.

Claim 11 (Currently amended): A high fill factor image array formed by:

providing a plurality of source-drain metal contacts on a substrate;

depositing a first passivation layer over the plurality of source-drain metal contacts and the substrate;

reducing the lateral leakage current between the plurality of source-drain metal contacts in the high fill factor image array by depositing a second passivation layer over the first passivation layer, the second passivation layer being thinner than the first passivation layer;

opening a plurality of via holes through the first and second passivation layers over the plurality of source-drain metal contacts;

depositing a layer of conductive material on the plurality of source-drain metal contacts and over the second passivation layer;

depositing a first doped a-Si layer as an optically active layer over the layer of conductive material;

patterning the first doped a-Si layer and the layer of conductive material to form collection electrodes;

depositing a continuous layer of i a-Si disposed on the second passivation layer and over the first doped a-Si layer;

depositing a continuous second layer of doped a-Si over the continuous layer of i a-Si;

depositing an upper conductive layer over the continuous second layer of doped a-Si; and

patterning to form the image array;

Claim 12 (Original): The high fill factor image array of claim 11, wherein the first passivation layer comprises at least one of silicon oxynitride, BCB, or a polyimide.

Claim 13 (Original): The high fill factor image array of claim 11, wherein the second passivation layer is an oxide.

Claim 14 (Previously presented): The high fill factor image array of claim 11, wherein the second passivation layer has a thickness of about 1000 Å.

Claim 15 (Canceled).

Claim 16 (Currently amended): A method for making a high fill factor image array comprising:

providing a source-drain metal contact;

depositing a first passivation layer over the source-drain metal contact;

reducing the lateral leakage current between the plurality of source-drain metal contacts in the high fill factor image array by depositing a second passivation layer over the first passivation layer, the second passivation layer being thinner than the first passivation layer;

opening a via hole through the first and second passivation layers to expose the source-drain metal contact;

depositing a layer of conductive material on the source-drain metal contact, such that the layer of conductive material makes electrical contact with the source-drain metal contact;

depositing a first doped a-Si layer as an optically active layer on the layer of conductive material;

patterning the a-Si layer and the layer of conductive material to form a collection electrode;

depositing sensor material comprising a continuous layer of i a-Si over the collection electrode and at least a portion of the second passivation layer;

depositing a continuous layer of doped a-Si over the continuous layer of i a-Si;

depositing a conductive layer over the continuous layer of doped a-Si; and

patterning conductive layer to form an upper electrode.

Claim 17 (Previously presented): The method for making a high fill factor image array according to claim 16, wherein the first passivation layer comprises silicon oxynitride, BCB, or a polyamide.

Claim 18 (Previously presented): The method for making a high fill factor image array according to claim 16, wherein the second passivation layer is an oxide.

Claim 19 (Previously presented): The method for making a high fill factor image array according to claim 16, wherein the second passivation layer has a thickness of about 1000 Å.